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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/562,927	12/30/2005	Antonio Ascolese	09952.0016	3675

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EXAMINER	
CHAMBERS, TANGELA T	
ART UNIT	PAPER NUMBER
2617	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,927	ASCOLESE ET AL.	
	Examiner	Art Unit	
	TANGELA T. CHAMBERS	2617	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *25 February 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *33,36-44,48,51-59,63 and 64* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *33,36-44,48,51-59,63 and 64* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *25 September 2008* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

1. This action is in response to the amendment and arguments filed on 2/25/2009.
2. Claims 1-32, 34-35, 45-47, 49-50 and 60-62 have been cancelled.
3. Claims 33, 44, 48, 59 and 64 have been amended.
4. Claims 33, 36-44, 48, 51-59 and 63-64 are rejected.

Information Disclosure Statement

5. The IDS filed February 25, 2009 has been acknowledged by the examiner.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 33, 36-37, 39, 41-44, 48, 51-52, 54, 56-59 and 63 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmavaara et al (Ahmavaara) (US Patent Publication No. 2004/0066756 A1), in view of Tummala et al (Tummala) (US Patent No. 6,915,345 B1).

As per claims 33 and 48, Ahmavaara discloses:

- ***A method for giving to at least one user access to a respective home operator over a communication network, said access being via an access network and through any of a plurality of supported visited networks,*** (Ahmavarra, Fig. 1 and Page 2, Paragraph [0020], "The access network may route the connection of the UE to at least one other network associated with the at least one access network

identification." … "The at least one other network may be a roaming PLMN network connected to a home PLMN network.").

- ***wherein at least one of said supported visited networks comprises a proxy/relay agent for those authentication requests that must be forwarded towards an identified operator,*** (Ahmavarra, Page 3, Paragraph [0031], Pages 4-5, Paragraphs [0081] and [0087]-[0091], "RADIUS proxies receiving the above user NAI, check from their "RADIUS routing tables" for the forwarding of the message.").
- ***said at least one user is given the possibility of selecting one of said supported visited networks as the path for reaching said respective home operator,*** (Ahmavarra, Page 1, Paragraph [0011], Page 3, Paragraph [0030] and Page 4, Paragraph [0078], "The UE supporting network selection may implement automatic or/and manual selection of a roaming network.").
- ***receiving from said at least one user, user credentials at said access network,*** (Ahmavaara, Page 1, Paragraph [0013], Page 3, Paragraph [0032] and Page 4, Paragraph [0088] and Pages 4-5, Paragraph [0090]), Ahmavaara teaches the user sending its credentials to the access network.
- ***wherein the user credentials comprise a realm-identification component,*** (Ahmavaara, Page 1, Paragraph [0013], Page 3, Paragraph [0032] and Page 4, Paragraph [0088] and Pages 4-5, Paragraph [0090], "When connecting to a network, the UE indicates the selected roaming network (e.g. a PLMN) in a realm part of a network access identifier (NAI) user identity sent to the network.").
- ***forwarding said user credentials to an authentication function at said access network,*** (Ahmavaara, Page 3, Paragraph [0032] and Page 4, Paragraphs [0088]-[0089], "When the UE has selected the SSID, the UE creates the RADIUS realm from the selected SSID and adds this realm to the end of the user identity complying to the network access identifier (NAI) format. Since the concatenated user identity complies with the NAI format, the authentication is first routed to the selected backbone network."), The NAI created must be authenticated by the access network before it is forwarded.

- ***searching in a routing table for a realm identified by the realm-identification component,*** (Ahmavaara, Page 1, Paragraph [0013] and Page 4, Paragraph [0088], "RADIUS proxies receiving the above user NAI, check from their "RADIUS routing tables" for the forwarding of the message. The routing is based on the "most significant bits" of the realm[.]"), Ahmavaara teaches searching (checking) a routing table for a received NAI, which includes a realm component.
- ***retrieving a set of available roaming networks for said at least one user, thus retrieving a list of operators holding a roaming agreement with said respective home operator of said at least one user;*** (Ahmavaara, Fig.1 and Pages 2-3, Paragraph [0026], "The communication of the SSID's from visited PLMN's 1 and 3 to the visited PLMN2 is illustrated as the arrows SSID PLMN1 and SSID PLMN2 being transmitted to the visited PLMN2. The visited PLMN2 transmits the identity SSIDs of the visited PLMN1 and the PLMN2 to the WLAN access zone. Also, the identity of SSID of the PLMN3 is passed directly to the WLAN access zone.").
- ***forwarding said list to said at least one user,*** (Ahmavaara, Page 1, Paragraph [0010] and Page 3, Paragraph [0027], "The information about available backbone networks is communicated by the WLAN AP to the UE in the form of WLAN SSIDs.").
- ***receiving from said at least one user at said authentication function an identifier of an operator selected from said list,*** (Ahmavarra, Page 1, Paragraph [0013], Page 3, Paragraph [0032] and Pages 4, Paragraphs [0080] and [0082], "If the WLAN UE supports the roaming network selection, the UE may select to which of the available backbone networks the WLAN AN may direct the user.").
- ***forwarding to the operator identified by said identifier a user's authentication request,*** (Ahmavarra, Page 3, Paragraph [0032] and Page 4, Paragraphs [0088]-[0089]).

Ahmavaara discloses authentication requests to supported visited networks and searching for a realm in a routing table but does not specifically disclose the following limitations. However, Tummala in an analogous art discloses:

- ***wherein at least one of said supported visited networks comprises a redirect agent for those authentication requests that have an unknown realm,*** (Tummala, Column 10, Lines 38-65 and Column 11, Lines 8-20 and Lines 40-51, "After confirming that no SLA exists between the home network 310 and foreign network 340, the AAA server 349 consults with the Broker AAA Server 375 in communication 380."), Tummala teaches an AAA server as a redirect agent.
- ***redirecting to all said supported visited networks the user credentials whose realm-identification component does not correspond to any realm identified in the routing table;*** (Tummala, Column 11, Lines 40-64, "When the AAAF Server 349 receives the AMR message 410, it looks at the realm portion of the optional Destination-NAI or required User-Name AVP and compares it against its Destination Realm table. If there is no match, a broker referral table should be consulted.").
- ***returning from said supported visited networks to said access network redirect notifications as well as contact information to said user's respective home operator,*** (Tummala, Column 10, Line 54 – Column 11, Line 7 and Column 11, Lines 52 – Column 12, Line 9, "The AAA Broker Server 375 will respond with a DDA message 385 giving sufficient information to securely contact the AAAH Server 317.").

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of Tummala into the teaching of Ahmavaara to have a redirect agent capable of redirecting user credentials with an unknown realm to supported visited networks and receive a redirect notification and the user's home operator contact information from the supported visited network. The modification would be obvious because one of ordinary skill in the art would only want the benefit of eliminating the need for each network to establish individual service level agreements with every other service provider and network on the Internet. (Tummala, Column 6, Lines 37-45).

As per claims 36 and 51, Ahmavaara further discloses:

- ***including the user credentials in said user's authentication request.*** (Ahmavarra, Page 3, Paragraph [0032] and Pages 4, Paragraphs [0080] and [0088]-[0089]), Ahmavaara teaches including the user credentials in the authentication request.

As per claims 37 and 52, Ahmavaara further discloses:

- ***assigning to said at least one user an NAI identifier;*** (Page 4, Paragraphs [0079]-[0086]), Ahmavaara teaches assigning the user a network access identifier.
- ***identifying said at least one user through the realm part of said NAI identifier.*** (Page 4, Paragraphs [0079]-[0086]), Ahmavaara teaches identifying the user using the realm portion of the network access identifier.

As per claims 39 and 54 Ahmavaara further discloses:

- ***said access network has a direct roaming agreement with said user's respective home operator, comprising the step of forwarding to said at least one user a list including said user's respective home operator only.*** (Ahmavaara, Fig. 1, Page 1, Paragraphs [0009]-[0014], Pages 2-3, Paragraph [0026] and Page 4, Paragraphs [0060]-[0065] and [0076], "The UE always tries first to connect directly to the home network which is Home PLMN 4 which includes the UE's home location register (HLR)."), Ahmavaara discloses that an order of connection may be used by a user in selecting a network. Only if the home network is not available does the user try to connect to visited networks broadcast by the access point.

As the user always tries to connect to the home network first, it would have been obvious to one of ordinary skill in the art at the time the invention was made to have the list provided by the access point contain only the identification of the home network when a direct roaming agreement exists with the user's home network.

As per claims 41 and 56, Ahmavaara further discloses:

- ***proxying said user's authentication request from said operator identified by said identifier to said user's respective home operator.*** (Ahmavaara, Fig. 1, Page 3,

Paragraph [0032], Page 4, Paragraphs [0087]-[0089] and Page 5, Paragraph [0091], "The user authentication to be performed may still involve AAA roaming (proxying) or mobile application part (MAP) roaming towards the users home network.").

As per claims 42 and 57, Ahmavaara further discloses:

- ***selecting said authentication function as an EAP based function.*** (Ahmavaara, Page 4, Paragraphs [0080] and [0085]-[0086] and [0089]), Ahmavaara teaches using an authentication function based on Extensible Authentication Protocol.

As per claims 43 and 58, Tummala further discloses:

- ***including in at least one of said access network and said supported visited networks a Diameter node.*** (Tummala, Column 6, Lines 1-11, "A simple Diameter proxy is a server that simply forwards the request based on a decision process such as NAI parsing or other decision.").

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of the Tummala into the teaching of Ahmavaara to include a Diameter node in an access and supported visited network. The modification would be obvious because one of ordinary skill in the art would want the benefit of eliminating the need for each network to establish individual service level agreements with every other service provider and network on the Internet. (Tummala, Column 6, Lines 37-45).

As per claims 44 and 59, Ahmavaara further discloses:

- ***including in said access network a proxy/relay agent.*** (Ahmavaara, Page 3, Paragraph [0031], Pages 4-5, Paragraphs [0081] and [0087]-[0091], "The realm name entity is present in visited PLMNs 1-3 and home PLMN5 as a AAA proxy.").

As per claim 63, Ahmavaara further discloses:

- ***in the form of an IP network*** (Ahmavaara, Abstract and Page 1, Paragraph [0011] – Page 2, Paragraph [0021]), Ahmavaara teaches the network being an internet protocol (IP) network.

Claims 38 and 53 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmavaara et al (Ahmavaara) (US Patent Publication No. 2004/0066756 A1), in view of Tummala et al (Tummala) (US Patent No. 6,915,345 B1), and in further view of Thomas (US Patent No. 6,421,339 B1).

As per claims 38 and 53, Ahmavaara discloses receiving and forwarding user credentials and retrieving a set of available roaming networks but does not specifically disclose:

- ***said steps of receiving and forwarding user credentials and retrieving a set of available roaming networks is performed only once, when a first authentication request is received by said authentication function in respect to a user for which no direct roaming agreements exist with said user's respective home operator.***

However, Thomas in an analogous art discloses the above limitation. (Thomas, Column 3, Line 60 – Column 4, Line 30 and Column 6, Lines 20-42, "After arriving at the visited network, the roaming user registers with a visited gatekeeper. The visited gatekeeper authorizes the registration by determining the network of the roaming user and that a roaming agreement exists between the visited and home network."), Thomas teaches that the user credentials are authenticated and if no direct roaming agreement exists, the user is not allowed to roam and no further action occurs.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of the Thomas into the teaching of Ahmavaara and Tummala to forward user credentials and retrieve a set of available roaming networks only once when no direct roaming agreement exists. The modification would be obvious because one of ordinary skill in the art would want to only

allow users authorized to roam within a visited network the ability to roam. (Thomas, Column 6, Lines 20-42).

Claims 40 and 55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmavaara et al (Ahmavaara) (US Patent Publication No. 2004/0066756 A1), in view of Tummala et al (Tummala) (US Patent No. 6,915,345 B1), and in further view of Basilier et al (Basilier) (US Patent No. 6,728,536 B1).

As per claims 40 and 55, Ahmavaara discloses an access network having a direct roaming agreement with a user's home operator, but does not specifically disclose:

- ***said access network has a direct roaming agreement with said user's respective home operator, comprising the step of directly forwarding the user's authentication request to said user's respective home operator.*** However, Basilier in an analogous art discloses the above limitation. (Basilier, Column 1, Lines 38-48 and Column 5, Line 60 –Column 6, Line 30, "For the example given above wherein the AAA-F 118 contains roaming information regarding the mobile terminal 102, the AAA-F 118 would analyze the received IMSI digits in the NAI and though internal tables locate the appropriate AAA-H 110."), Basilier teaches that when a roaming agreement exists between the access and home network, the authentication request is routed to the home network for authentication.

Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the teaching of the Basilier into the teaching of Ahmavaara and Tummala to route an authentication request to the home network when a direct roaming agreement exists. The modification would be obvious because one of ordinary skill in the art would only want an efficient way to transmit access specific information from an access network to a home network. (Basilier, Column 1, Lines 9-14).

Claim 64 is rejected under 35 U.S.C. 103(a) as being unpatentable over Ahmavaara et al (Ahmavaara) (US Patent Publication No. 2004/0066756 A1), in view of Tummala et al (Tummala) (US Patent No. 6,915,345 B1), and in further view of Thomas (US Patent No. 6,421,339 B1) and Basilier et al (Basilier) (US Patent No. 6,728,536 B1).

As per claim 64, it is rejected under the same reasons set forth in connection of the rejections of claims 33 and 36-44, and further Ahmavaara discloses:

- ***A computer readable medium encoded with a computer program product loadable into a memory of at least one computer and including software code portions for performing the steps of any one of claims 33 or 36-44,*** (Ahmavaara, Abstract and Page 1, Paragraphs [0010]-[0014], "The UE selects the backbone network based on the available SSIDs. SSIDs containing a PLMN-ID may be linked to branded networks based on the information stored in WLAN UE client software.").

Conclusion

9. The prior art not relied upon but considered pertinent to applicant's disclosure is made of record and listed on form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TANGELA T. CHAMBERS whose telephone number is 571-270-3168. The examiner can normally be reached Monday through Thursday, 9:00am-6:30pm Eastern Time.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nick Corsaro, can be reached at 571-272-7876. The fax phone number for the organization where this application or proceeding is assigned is 571-270-4168.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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May 7, 2009

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